

REMARKS

Interview Summary

The applicant thanks the Examiner for the preliminary interview conducted on May 29, 2008. The undersigned provided an overview of the currently cited prior art and a summary of the differences from the present invention.

The undersigned described the primary difference between the subject process and that taught by Krish being that in the present case the anchoring adhesive is first allowed to gel or cure, and then the bonding adhesive is applied wet to bond the substrates. This allows the bonding adhesive – which is selected for its high adherence to the second material – to also adhere strongly to the first material despite inherent low-adhesion relative to the first material. Krish cures or dries all adhesive surfaces before adhering the composite adhesive to the second material, creating a composite adhesive “release” layer that has properties of both adhesives.

The Examiner indicated that language to this effect would overcome the Krish reference, in respect of claim 1, based on the Examiner’s recommendation at page 6 of the Office Action dated April 15, 2008. No agreement was reached in respect of independent claim 11, or the Yamamoto reference.

The Claims Are Patentable Over Prior Art***Krish et al.***

The applicant has amended claim 1 to recite “placing the second material into contact with the adhesive anchors and then curing the bonding adhesive to bond the bonding adhesive to the adhesive anchor,” as suggested by the Examiner on page 6 of the Office Action dated April 15, 2008. The Applicant submits that, as indicated by the Examiner, this overcomes the objection based on anticipation by Krish in respect of claim 1. It is noted that the final step of claim 1 “placing the second material into contact with the adhesive anchors and then curing the bonding adhesive,” combined with the previous step “applying a bonding adhesive to the first material or to the second material or to both before the bonding adhesive has cured,” necessarily requires that the bonding adhesive contact both materials in the wet condition.

The applicant has also amended claim 11 to recite “the anchoring adhesive having a higher adhesion to the material than the casting adhesive” in the body of the claim, and submits that this patentably distinguishes claim 11 over Krish. Nothing in Krish indicates that one adhesive has a better adhesion to the substrate than the other; he is merely concerned that the “composite” adhesive has good adhesion. The applicant thus submits that this amendment distinguishes the claimed invention over Krish.

Yamamoto *et al.*

The Examiner has maintained the rejection of pending claims 1-7 and 11-16 as anticipated by Yamamoto *et al.*

The Applicant respectfully submits that the claims as presented herein are novel and patentably distinguishable from Yamamoto.

The Examiner has characterized a number of features in Yamamoto as satisfying elements of the claimed invention, which the Applicant submits do not structurally or functionally meet those features.

The Examiner has characterized Yamamoto’s layer 39 as a “work surface,” whereas it is in fact a “caul” or membrane: see col. 12, line 60. This caul 39 is not a work surface as it cannot support the first material.

More important, however, is that the Examiner has also characterized Yamamoto’s “conductive bumps” 34’ as “adhesive anchors,” which is not the case. These conductive bumps perform the function of penetrating through a nonconductive synthetic resin layer to provide a conductive path through the layer, joining one conductive face of the board to the other (col. 1, lines 21-24). **They do not anchor an adhesive.** Moreover, they cannot satisfy the step in claims 1 and 11 of “applying an anchoring *adhesive* to the material,” because they are not formed from an adhesive, but are formed from metal: see col. 4, lines 56 to 63; col. 5 line 56 to col. 6, line 33.

The claimed invention teaches a method of adhering a first material to a second material in which a bonding adhesive intrudes into the interstitial spaces and bonds to adhesive anchors formed by an anchoring adhesive, thereby improving adhesion of the bonding adhesive to the

first and/or second materials. The anchoring adhesive thus serves to anchor the bonding adhesive (or a casting adhesive) to the material.

By forming these adhesive anchors to which the bonding adhesive (or casting adhesive) can adhere, the invention improves bonding of a first material to a second material, or in the case of a casting adhesive improves bonding of a first material to the casting adhesive, by adding physical and chemical bonding sites to the adhesion zone.

Yamamoto's conductive metal bumps do not add physical and chemical bonding sites to the adhesion zone, they merely provide conductive pathways through the insulating layers 32 (col. 6, lines 34-36).

Nothing in Yamamoto suggests that the synthetic resin layer (characterized by the Examiner as the "bonding adhesive" (claim 1) or "casting adhesive" (claim 11)) adheres to the conductive bumps. The synthetic resin layer (shown in Figure 11 between layers 32 and 33, or 32 and 33') bonds to the layer 33 or 33'. There is no teaching of the function of improving the adhesion to a first material (for example layer 33) by providing *adhesive anchors* to which the bonding adhesive bonds adheres more strongly than to the first material itself, which is the point of the present invention. In fact, a synthetic resin layer would generally adhere more strongly to the insulating layer 32 (board) than to a metal. The conductive bumps are merely "embedded in the synthetic resin by pressure" (col. 4, lines 47-48), they are not taught as adhering to the synthetic layer.

Yamamoto's anchors are clearly not intended to serve this purpose – much discussion is given to the advantages of their conical shape (see col. 5, lines 6-55), and the mere fact that they are conical would reduce their effectiveness as anchors for the bonding adhesive. More important, however, is that Yamamoto does not teach that the synthetic resin layer (characterized by the Examiner as "bonding adhesive") actually adheres to his conductive metal bumps.

In fact, **Yamamoto teaches away from this feature**: he states "The synthetic resin sheet is thus laminated on the support as a laminate": col. 6, lines 60-62. Yamamoto teaches that *the synthetic sheet is laminated on the support*. It is not adhered to the conductive bumps 34', which merely penetrate through the synthetic layer.

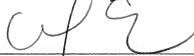
Claim 1 already includes the limitation “curing the bonding adhesive *to bond the bonding adhesive to the adhesive anchors*.” Claim 11 has been amended to recite “allowing the casting adhesive to cure and bond *to the adhesive anchors*” in the body of the claim. The applicant submits that these recited features patentably distinguish the invention from Yamamoto.

Favourable reconsideration and allowance of this application are therefore requested.

This response is accompanied by a Petition for a two month extension of time. The Commissioner is authorized to charge any required fees to our Deposit Account No. 500663.

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